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CASE REPORT

TENUOUS FIBROMA "PERIPHERAL ODONTOGENIC FIBROMA"

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ABSTRACT

Most odontogenic tumors are intraosseous in nature but at times they might have peripheral location like gingiva therefore they are referred to as peripheral odontogenic tumors (POTs). Peripheral odontogenic fibroma (POdF) is the only POT that is more frequent than its central counterpart. This tumor is rather an uncommon gingival enlargement that is slow growing benign neoplasm that is unencapsulated exophytic gingival mass, which is composed of fibrous connective tissue associated with various amount of calcifications and islands of odontogenic epithelium . Due to its firm and non tender nature on palpation it could be mistaken for other more common gingival lesions like peripheral ossifying fibroma, pyogenic granuloma etc. Hence, histopathological examination is inevitable for factual diagnosis. This article illustrates a well documented case of POdf with regards to its diagnosis, treatment modalities and recurrence.

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INTRODUCTION

The odontogenic fibroma is defined by the World Health Organization (WHO) as benign odontogenic neoplasm of fibroblastic origin. It constitutes relatively mature collagenous fibrous tissue and varying amount of odontogenic epithelium. Location is varied that is it may be central or extraosseous. Peripheral odontogenic tumors are rare, comprising around 0.05% of all biopsy specimens. (Ravina Livada *et al*., 2013) Gardner (Gardner, 1980) was the first to define POdF as a clinical entity, though initially it was thought to be a rare extraosseous counterpart of central odontogenic fibroma (Gardner, 1982). In contrast to the reactive nature of peripheral ossifying fibroma, this lesion is considered to be fibroblastic neoplasm of odontogenic origin. (De Villers slabbert *et al*., 1991) The term peripheral odontogenic fibroma WHO type was suggested to distinguish between POdF and POF, which were once used interchangeably, especially in North America. When compared with peripheral ossifying fibroma, the peripheral odontogenic fibroma is a rare lesion. It is believed to arise from overlying gingival epithelium or the dental lamina or remnants of dental lamina remaining in an extraosseous location. The epithelial component of the lesion shows resemblance to dental lamina formed during early stages of odontogenesis.

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The lesion provides evidence that it originates from a rehash dental lamina as the epithelium is potent of producing inductive changes in the connective tissue, similar to what that is seen in dental lamina during odontogenesis. The periodontal ligament has been proposed to be the possible source for POdF as these tumors are found exclusively in the tooth-bearing areas of the jaw. (De Villers slabbert and Altini, 1991) Approximately 175 cases of POdF have been described in literature. (Neville *et al*., 1995)

Case Report

A 22-year-old Indian female was referred to the Department of Periodontics, Kothiwal Dental College & Research centre, Moradabad for evaluation of asymptomatic, slow growing mass in interdental gingival of right maxillary lateral region since 1 year. Bleeding and slight pain on mastication and brushing was complained by the patient. In addition to the above it gave unaesthetic appearance due to its location.

Clinical Examination

The clinical examination revealed a localized enlargement in interdental area in respect to 11, 12 region measuring approximately 1cm x 5cm in dimension. The growth was pale pink in colour, firm in consistency and tender on palpation.

Radiographic examination revealed vertical bone loss. A uniform probing pocket depth of 5mm was noted on distal as well as palatal aspect of 11 and 5mm on the mesial and palatal aspect of 21. Vitality tests revealed vital pulps with no signs of pulpal pathology.

Treatment

The surgical excision of the growth was planned, the site was prepared local anaesthesia which included infraorbital and nasopalatine nerve block was given. A crevicular incision was given starting from distal aspect of 11 extending to the interdental area of 11 and 12 terminating at mesial aspect of 12. Similarly, crevicular incision was given on the palatal side. A full thickness flap was reflected on the buccal as well as palatal aspect. The growth was subsequently removed along with small amount of healthy gingiva and was cleaned and kept in normal saline. The area was thoroughly debrided on both buccal as well as palatal aspect with respect to interdental area of 11 and 12. The bone defect was corrected by placement of bone graft and the flap was repositioned and sutured at its original site. The area was dried, a tin foil was placed and periodontal dressing was given. The excised tissue was sent for histopathological examination.

Histologic Findings

Histologic sections showed parakeratinized stratified squamous epithelium that was compressed and had blunt rete ridges in some areas. Some strands of odontogenic epithelium were also seen. The underlying connective tissue stroma showed interlacing bundles of collagen fibres, fibrobasts, inflammatory cells mainly lymphocytes, admixed in a stroma of few blood vessels of various size. Histiocytes were also seen. Based on clinical and histopathological examination, the final diagnosis of *ODONTOGENIC FIBROMA* was established.

DISCUSSSION

Peripheral Odontogenic fibroma generally presents on the gingiva as either pedunculated or sessile firm enlargement with pink, smooth and non-ulcerated mucosal surface, size commonly ranging from 0.5cm to 3.4 cm in diameter. Chen *et al*[6] reported a unique case of untreated lesion measuring about 4.5cm x 4cm exhibiting the growth potential, if left untreated. This peripheral odontogenic fibroma is usually asymptomatic and its location and size varies. However, in rare cases, where the lesion is larger than 3cm in size, tilting of adjacent teeth and even exfoliations have been reported. (Lin *et al*., 2008) Alveolar bone resorption and mild facial asymmetry have been reported as well. (Lin *et al*., 2008) Bonetti *et al*. (Bonetti *et al*., 2008) reported a case where the POdF caused localized obstruction of permanent teeth eruption in a 12-year-old boy. There is no age predilection as it may appear at any age, starting with the first decade of life with minor increase in third decade of life. Souza (Martelli-Junior *et al*., 2006) reported in 2006 a case of POdF removal from a 4-month-old baby that had been since birth and a 16-month follow- up showed no recurrence followed with normal eruption of primary incisors. It had an equal gender distribution, with some studies finding a slight female predilection, (De Villers slabbert and Altini, 1991) while others reported slight male predilection. It appears to affect Caucasians more often than it does African-Americans. (Gardner, 1982) The POdF arises from either arch and tends to occur in mandibular canine-premolar and maxillary anteriors. (Rinaggio *et al*., 2007) The histologic picture of this lesion varies, connective tissue ranges from loose (almost myxomatous) to markedly cellular or to relatively cellular and well organized. (Buchner *et al*., 1987) Islands of odontogenic epithelium are scattered all over the connective tissue, which may be prominent or scarce. Hard tissue resembling dentin and its protein matrix are occasionally seen in both central and peripheral entities, but this finding has no prognostic significance. (Gardner, 1996) POdF is treated by complete excision of the soft tissue lesion including the underlying periosteum thinning down the predicament of recurrence. Budding of the surface epithelium and calcification in apposition to odontogenic epithelial rests are histologic predictors of recurrence. (Ritwik and Brannon, 2010) There is a general paucity of information with regards to management of POdF due to its rarity and lack of clinical trials. In particular, the number of studies with follow-up is limited, and hence its potential for recurrence remains unclear. (Curran, 2004) Generally the recurrence develops 1-4 years after surgical removal, but it is noted that if the lesion does not recur in first year the chances of recurrence remains thin.

Differential Diagnosis

Clinical differential diagnosis for POdF includes fibroma peripheral giant cell granuloma, pyogenic granuloma and peripheral ossifying fibroma. The above mentioned lesions may have similar clinical appearance and course hence histopathologic examination is mandatory for definitive diagnosis. Histologically, the key feature of Pod F is presence of odontogenic epithelium and dysplastic dentin and/or cememtum like material.

Conclusion

This present article contains a well documented case report on peripheral odontogenic fibroma and its treatment which included not only excision of the growth but also correction of underlying bony defect by placement of bone graft. The patient was kept under regular recall for a year and the site showed no signs of recurrence.

Figure 1. The initial size and site of the lesion

Figure 2. Radiograph of the patient

Figure 3. Full thickness flap raised on buccal aspect

Figure 4. Full thickness flap raised on palatal aspect

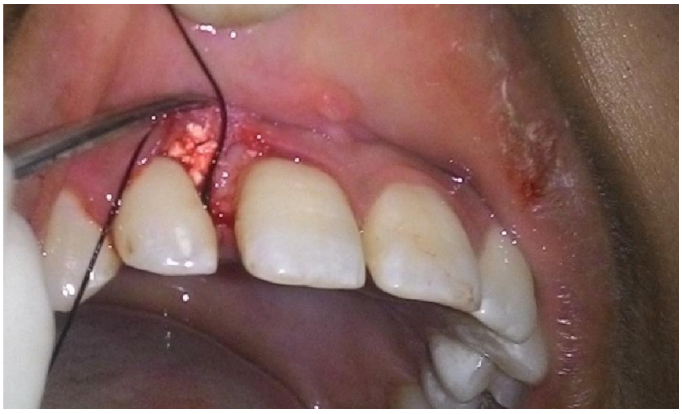

Figure 5. Bone graft placed

Figure 6. Sutures and tin foil placed

Figure 7. Periodontal dressing was placed

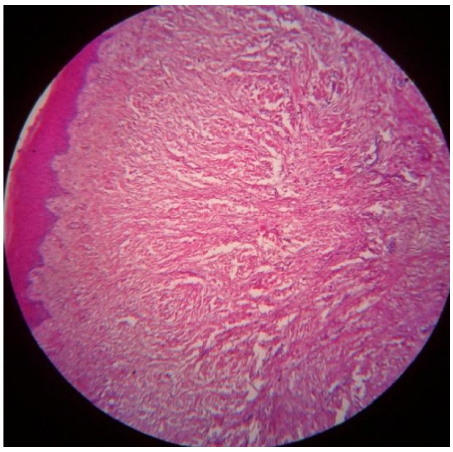

Figure 8. Histopathological picture

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